April 21, 1931. H. G. ALETTER 1,802,230

ELECTRIC PLUG

Filed March 25, 1929

Fig. 1.

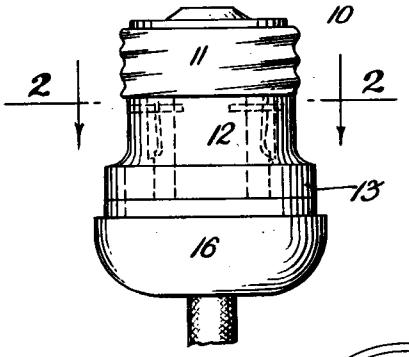


Fig. 2.

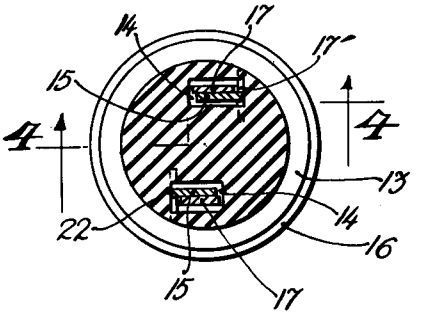


Fig 5.

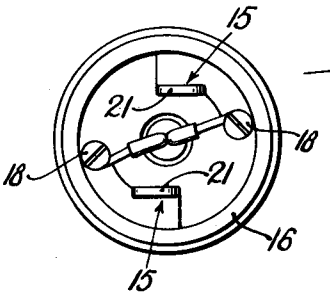


Fig. 6.

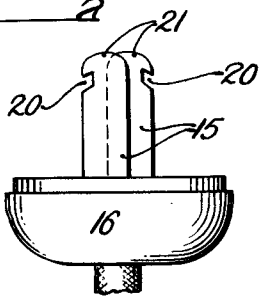


Fig. 4.

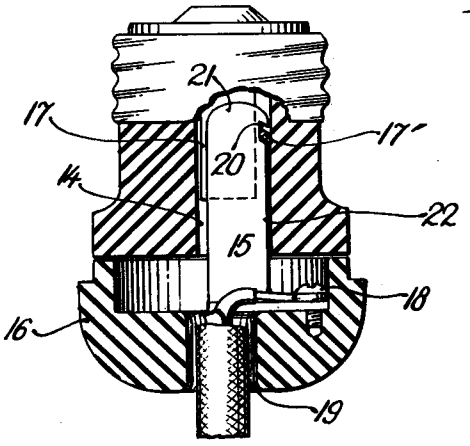
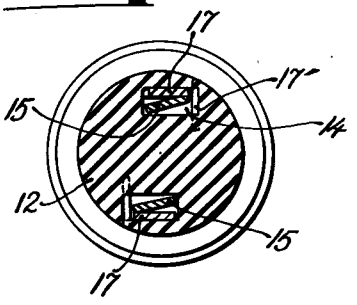


Fig. 3.



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UNITED STATES PATENT OFFICE

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ELECTRIC PLUG

Application filed March 25, 1929. Serial No. 349,789.

This invention relates to lock plugs with separable sections which are insertible as a unit in a socket located between a source of electrical energy and any device or apparatus for performing useful work electrically, connection of conductors between the source and the working mechanism being effected in the lock plug.

One of the objects of the invention is to provide a plug of the class described wherein the fixed structure of one of the sections cooperates with the fixed structure of the other section to unite the same in securely locked condition without the addition of movable parts.

Another object of the invention is to provide a plug with a pair of coacting sections, one of which is partly insertible axially, and also limitedly revolvable, in the other, so that initial axial withdrawal of the inserted part is effective to mutually lock the respective sections.

A further object of the invention is the provision of a device of the above described character which is simple in construction, strong and durable for the purpose intended, and inexpensive to manufacture.

With these and other objects in view, the invention resides in certain novel construction and combination and arrangement of parts, the essential features of which are hereinafter fully described, are particularly pointed out in the appended claims, and are illustrated in the accompanying drawings, in which:—

Figure 1 is a side elevational view of the lock plug.

Figure 2 is a horizontal sectional view taken on the line 2—2 of Figure 1.

Figure 3 is a view similar to Figure 2 but showing the terminals of the insertible member in the turned position.

Figure 4 is a vertical sectional view on the line 4—4 of Figure 2.

Figure 5 is a top plan view of the insertible member.

Figure 6 is a side elevational view of the insertible member.

Referring particularly to the drawing by reference characters, the numeral 10 represents the complete lock plug, one end 11 of the body section 12 of which is threaded for insertion in any ordinary electric socket, while the opposite end 13 is provided with slots or openings 14 to receive the blade terminals 15 of the insertible section or cap 16, said terminals being offset with respect to each other as shown in Figures 2, 3 and 5 of the drawing.

Located in the openings 14 are a pair of spring contacts 17 through which current is transmitted to the terminals 15, while a pair of pins 17′, rectangular in cross section are fixed in the material of the body section 12, and project into said openings for a purpose to be presently explained. The material of said body portion, like that of the cap 16, while preferably of hard rubber, may be of any other suitable insulating material.

While offset, relative to the transverse central line of the cap 16, the terminals 15 are located in parallel relation with each other and are rigidly secured to the cap by screws 18, to which conductors may be attached in the usual way to lead through the aperture 19 of said cap. Notches 20 in the terminals 15 adjacent the rounded ends 21 of the latter are adapted to receive the pins 17′, hereinbefore referred to.

On attaching the body and cap sections, the terminals 15 of the latter are embraced by the resilient contacts 17 and are guided thereby in spaced relation with the walls of the openings 14, which are wider than the said terminals. While so guided the side edges 22 of the terminals are in contact with the adjacent walls of the openings 14, and as the ends 21 of the terminals 15 are curved or rounded, said ends on reaching the pins 17′ tend to slide past the latter and snap back into their former position, under pressure of the flat springs 17 which normally rest flat against the sides of the terminals. This position is illustrated in Figure 5 of the drawings from which it will be seen that slight retraction of the cap 16 will cause engagement of the ends 21 with the respective pins and render accidental removal of said cap impossible.

When withdrawal of the cap is desired,

slight turning of the member 16, to the position shown in Figure 3 of the drawings, releases the hooks from the pins 17', after which the terminals are removable axially.

While I have described what I deem to be the most desirable embodiment of my invention, it is obvious that many of the details may be varied without in any way departing from the spirit of my invention, and I therefore do not limit myself to the exact details of construction herein set forth nor to anything less than the whole of my invention limited only by the appended claims.

What is claimed as new is:—

1. In a device of the class described, the combination of a body having a pair of apertures therein, a pair of pins rigidly secured in the body and projecting through said apertures one for each aperture, a cap having a pair of projecting prongs, said prongs adapted for insertion in said apertures, each prong having a hook at its end for engaging said pins.

2. In a device of the class described, the combination of a body having a pair of apertures therein, a pair of pins fixed in said body and projecting into its apertures, a cap having a pair of projecting terminals, spring contacts in said apertures for said terminals, and hooked ends on said terminals for engaging said pins.

3. In a device of the class described, the combination with a body member having guide springs therein, and a pair of fixed pins in said body, of a separable cap having a pair of terminals, and hooked ends on the latter for engaging in locked relation with said pins, said springs adapted to removably retain said hooks in the locked position.

4. An electric attachment plug comprising a socket member having a pair of recesses therein opening through one end of the same, fixed pins partly bridging the space between opposite walls of said recesses, resilient contact members extending into said recesses, a separable plug cap, flat contact pins carried thereby and having rounded free ends with a notch in one of the side edges of each pin, the said recesses being of a size to permit the flat contact pins to be freely inserted therein for slight turning movement to allow the notched ends to clear said fixed pins upon their insertion and be turned to cause the notched side edges of the flat contact pins to engage said fixed pins to lock the plug cap against accidental separation from said socket member and lie flat against said resilient contact members to effect an electrical connection therebetween.

5. A device of the class described comprising in combination a body having a pair of recesses therein, resilient conductors rigid with said body and partly projecting into said recesses, projections rigidly secured in said body in the recesses, a co-acting plug member having a pair of rigid conductors axially insertible in said recesses and limitedly revolvable in said recesses, and terminal hooks on said rigid conductors for removably engaging said projections, said resilient conductors adapted to contact with said rigid conductors for partly revolving the latter to removably hold said hooks in the engaged position.

In testimony whereof I hereby affix my signature.

HENRY GEORGE ALETTER.